

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure Page 2 of 16
Serial No.: 09/834,110
Confirmation No.: 5306
Filed: April 12, 2001
For: TREATMENT OF DISORDERS BY IMPLANTING STEM CELLS AND/OR PROGENY THEREOF INTO
GASTROINTESTINAL ORGANS

to the gut smooth muscle. The tone of the gut muscle depends on the summated influence of the opposing actions of these neurotransmitters.

In the Claims

Please cancel claims 18-20 and 28-30, amend claims 21, 26, 31, 32, 43, 35, 38, and 41, and add claims 44 and 45. The amended claims are provided below in clean form. Per 37 C.F.R. §1.121, amended claims are also shown in Appendix A with notations to indicate changes made (for convenience, all pending claims, including those added hereby, are provided in Appendix A).

21. (AMENDED) A method of repopulating neurons, muscles, or other tissues within the gastrointestinal alimentary tract of a subject suffering from a gastrointestinal disorder comprising implanting isolated stem cells, progeny thereof, or combinations thereof into the gastrointestinal alimentary tract of the subject suffering from a gastrointestinal disorder.
22. The method of claim 21 wherein the stem cells are selected from the group consisting of multipotent stem cells, pluripotent stem cells, totipotent stem cells, and combinations thereof.
23. The method of claim 21 wherein the stem cells are neural stem cells.
24. The method of claim 23 wherein the neural stem cells are derived from embryonic neural tissue, adult neural tissue, or combinations thereof.
25. The method of claim 21 wherein the implanted cells repopulate neurons.
26. (AMENDED) The method of claim 21 wherein the subject suffers from a disorder of the enteric nervous system.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure Page 3 of 16
Serial No.: 09/834,110
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27. The method of claim 26 wherein said disorder of the enteric nervous system is selected from the group consisting of achalasia, Hirschsprung's disease, congenital pyloric stenosis, reflux disease, irritable bowel syndrome, and intestinal pseudo-obstruction.

31. (AMENDED) The method of claim 21 wherein the gastrointestinal alimentary tract is the mouth, the esophagus, the stomach, or the bowels.

32. (AMENDED) The method of claim 21 wherein implanting cells into a gastrointestinal alimentary tract of a subject comprises administering the cells locally.

33. The method of claim 32 wherein administering cells locally comprises injecting the cells into a wall of the gastrointestinal tract.

34. (AMENDED) A method of repopulating neurons within the gastrointestinal alimentary tract of a subject suffering from a gastrointestinal disorder comprising implanting isolated neural stem cells, progeny thereof, or combinations thereof into the gastrointestinal alimentary tract of the subject suffering from a gastrointestinal disorder.

35. (AMENDED) A method of providing a neurotransmitter within the gastrointestinal alimentary tract of a subject suffering from a gastrointestinal disorder comprising implanting isolated neural stem cells, progeny thereof, or combinations thereof into the gastrointestinal alimentary tract of the subject suffering from a gastrointestinal disorder.

36. The method of claim 35 wherein the neurotransmitter is nitric oxide.

37. The method of claim 35 wherein the neurotransmitter is substance P.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure Page 4 of 16
Serial No.: 09/834,110
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38. (AMENDED) A method of producing nitrinergic neurons in a subject suffering from an enteric nervous disorder comprising implanting isolated neural stem cells into the smooth muscle of the gastrointestinal alimentary tract of the subject suffering from an enteric nervous disorder.
39. The method of claim 38 wherein the neural stem cells are implanted into the pylorus.
40. The method of claim 38 wherein the neural stem cells are implanted into the duodenum.
41. (AMENDED) A method of treating a disorder of the enteric nervous system in a subject suffering from an enteric nervous disorder comprising implanting isolated neural stem cells, progeny thereof, or combinations thereof into the gastrointestinal alimentary tract of the subject suffering from an enteric nervous disorder.
42. The method of claim 41 wherein the implanted cells produce nitric oxide.
43. The method of claim 41 wherein the cells are implanted into the pylorus.
44. (NEW) The method of claim 38 wherein said disorder of the enteric nervous system is selected from the group consisting of achalasia, Hirschsprung's disease, congenital pyloric stenosis, reflux disease, irritable bowel syndrome, and intestinal pseudo-obstruction.
45. (NEW) The method of claim 41 wherein said disorder of the enteric nervous system is selected from the group consisting of achalasia, Hirschsprung's disease, congenital pyloric stenosis, reflux disease, irritable bowel syndrome, and intestinal pseudo-obstruction.